

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PURUSOTTAM SAHOO, SHANE M. RICHARD,
CYRIL STEPHEN MAGDA, JR.,
and GARY DENNIS LOGAN

Appeal 2007-0298
Application 10/758,565
Technology Center 1700

Decided: January 31, 2007

Before EDWARD C. KIMLIN, PETER F. KRATZ, and
CHUNG K. PAK, *Administrative Patent Judges*.
KIMLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-14. Claim 1 is illustrative:

1. A thermal barrier coating for a substrate, said coating comprising
a MCrAlY bond coat wherein M is at least one of Ni and Co;
an intermediate crack resistant ceramic coating on said bond coat;
and

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a vertically cracked top coat of yttria stabilized zirconia on said intermediate coat.

The Examiner relies upon the following references in the rejections of the appealed claims:

Vine	US 4,936,745	Jun. 26, 1990
Subramanian	US 6,703,137 B2	Mar. 9, 2004
Subramanian	US 6,716,539 B2	Apr. 6, 2004

Appellants' claimed invention is directed to a thermal barrier coating for a substrate comprising a bond coat, an intermediate crack resistant ceramic coating, and a vertically cracked top coat of yttria stabilized zirconia.

Appealed claims 1, 2, 4, 5, and 7 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Subramanian '539. Claims 6 and 8-11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Subramanian '539 in view of Vine. Also, claim 3 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Subramanian '539 in view of Subramanian '137.

Appellants do not advance separate arguments for any particular claim on appeal, nor do Appellants present separate, substantive arguments with respect to the § 103 rejections. Accordingly, we will limit our consideration to the Examiner's § 102 rejection of claim 1.

We have thoroughly reviewed each of Appellants' arguments for patentability. However, we concur with the Examiner that the subject matter of claim 1 is described by the prior art within the meaning of § 102. Accordingly, we will sustain the Examiner's rejections.

Appellants do not dispute the Examiner's factual determination that Subramanian '539 describes the presently claimed thermal barrier coating for a substrate comprising an MCrAlY bond coat, an intermediate crack resistant ceramic coating on the bond coat, and a top coat of yttria stabilized zirconia. The sole argument presented by Appellants is that the yttria stabilized top coat of Subramanian '539 is not vertically cracked, as presently claimed. However, we fully concur with the Examiner that the vertical gaps of the reference fully meet the claim requirement for vertical cracks. As explained by the Examiner, the dictionary definitions for the terms "crack" and "gap" are fairly synonymous. Furthermore, Appellants' specification does not provide a definition for cracks in the top coat, and Appellants have not established on this record that one of ordinary skill in the art would understand that the claimed cracks are structurally different than the gaps of the reference. As stated by the Examiner, Appellants do not "provide support for the contention that one skilled in the art could not consider the gaps 26 of Subramanian '539 as cracks" (Answer 6, first full sentence).

Moreover, we agree with the Examiner that Subramanian '539 fairly describes cracks in the top layer inasmuch as the reference expressly teaches that the porosity of the first layer 20 is sufficiently high so that the pores "function to arrest the propagation of a crack originating at the generally vertical gaps 26" (col. 4, ll. 63-64). In order for the propagation of a crack to be arrested, i.e., to grow further, it must first exist in the top layer. The

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first dictionary definition of the term “arrest” is “to stop or check the motion, course, or spread of.”¹ We note that Appellants have not refuted this rationale of the Examiner.

Appellants’ traversal of the 103 rejections are based solely on the asserted deficiency of the 102 rejection.

In conclusion, based on the foregoing and the reasons well stated by the Examiner, the Examiner’s decision rejecting the appealed claims is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2004).

AFFIRMED

clj

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¹ *Webster’s New World Dictionary of American English* (3d college ed. 1992).